Customer Success Story

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

10X reduction in power compared to DRAM[1]

Barcelona Supercomputing Center Research Accelerates HPC Workloads

Barcelona Supercomputing Center is at the heart of innovative hierarchical memory research using Intel® Optane™ persistent memory. High Performance Computing (HPC) applications are constrained by the amount of DRAM in the nodes and cluster. They need more memory, but adding more DRAM with the current technology is not feasible due to overall system power constraints. A team lead by Antonio Peña is using Intel Optane persistent memory in App Direct mode. They are treating the memory modules as large capacity, manageable system memory with data objects intelligently allocated to optimize the performance of applications. The team is collaborating with Intel to help build a new software ecosystem around byte-addressable persistent memory to accelerate HPC applications while enabling more power-efficient supercomputers.

> "We're trying to reduce server power while accelerating applications by using Intel Optane PMem and intelligently managing where the data is located and its movements. We can take advantage of the big memory footprint that the new technology offers and put more data closer to the processor."
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> **Antonio Peña, senior researcher, Barcelona Supercomputing Center**

Products and Solutions
2nd Gen Intel® Xeon® Scalable processors
Intel® Optane™ persistent memory

Industry
Research

Organization Size
501-1,000

Country
Spain

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Case Study

1 For more complete information about performance and benchmark results, visit https://www.intel.com/content/www/us/en/customer-spotlight/stories/barcelona-supercomputing-center-customer-story.html